

### (P1-16) Local Health-Related Capacities in the Northern Haiti Post-Earthquake Response

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**Background:** The January 2010 earthquake affected many services in Haiti, including health care. After the disaster, top-down response from international sources seemed like the only solution. While the existing health system was fragile, opportunities likely existed for incorporating bottom-up approaches in the capital and other cities, such as Cap Haitien in the North.

**Objective:** The study aims to: (1) identify available local health-related resources; (2) examine how these were, or were not, utilized in response efforts; and (3) evaluate the level of coordination among health delivery groups, particularly preparedness and recovery.

**Methods:** This case study included 11 key informant interviews at two hospitals (six at Justinian and five at Milot) and an organizational analysis of cooperation among 16 health-related organizations operating in northern Haiti. Disaster preparedness and recovery data for the health-sector organizations were obtained using a validated survey instrument and the Program to Analyze, Record, and Track Networks to Enhance Relationships (PARTNER) tool that uses the principles of Social Network Analysis (SNA) to elucidate the makeup of collaborative relationships.

**Results:** During the response phase, command-and-control approaches from international healthcare organizations had a roll given the numbers of people affected and the overwhelmed local response capabilities. Pre-disaster vulnerabilities limited response capacity. Even during response, opportunities existed for integrating established groups. Generally, this was not a model utilized by international organizations, although some examples were present.

**Conclusions:** The external infusion of money, priorities, and forces potentially may harm the current system, rather than build upon it. International aid provides free health services beyond treatment of earthquake-related injuries, taking the place of some service functions of the Haitian system. Eventually, this could erode aspects of the Haitian health system. Alternative models of aid may better incorporate and integrate existing structures. Disaster planning is linked intrinsically to strengthening the health system as a whole.

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### (P1-17) Zürich Rescue System for Mass Gatherings: 19 Year Experience with Disaster Risk Reduction, Risk Management, and Rescue Organizations

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Zürich is divided by a river and > 6 km lakeside labyrinth of small streets in the old city. Since 1992, Zürich hosts the street parade, which is the biggest event in Switzerland and one of the biggest in Europe. It is an event of techno parties, and nearly one

million people gather along the lake and the old city. Medical assistance is provided by the emergency system of Zürich in cooperation with the fire department, police department, as well as the emergency systems of the neighborhoods, civil protection, and Volunteers. This mass gathering is unique because almost 16 km<sup>2</sup> of the city and old city and four of the six bridges that connect the two sides of the city are closed and dedicated to the Streetparade, which complicates rescue operations. Since it is impossible for an ambulance to get to injured persons in the crowd, and very difficult to transfer patients to a hospital, many stationary medical units and two boats are used in the city, each with a combination of emergency doctors, paramedics, firefighters, and volunteers, who also can build mobile units and an advanced medical unit in a shelter that has rooms for 108 patients. Every mobile unit has a GPS system that permits the Operational Headquarters to have an overview. This system has been helpful in this particular event, permitting medical personnel to reach the injured persons in short time and to treat the majority of the patients in situ, minimizing the necessity of transport. In 2010, 680 patients were treated 680, of which, only 42 were transported to a hospital. No deaths due to panic attacks of lack of emergency response have occurred in the past 19 years.

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### (P1-18) Experience of IMSS Medical Equipment in Rescue Efforts in Haiti

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Has been a tradition of the Mexican Social Security Institute (IMSS) have a great spirit of solidarity with any type of disaster. That is why the early hours of the earthquake in Haiti was appointed to a group of specialists trained in emergency care who participated in the first acts of rescue and stabilization of multiple victims. The first group of six specialists arrived Port au Prince on January 15 fieldwork being allocated in coordination with the rest of the Mexican aid mission in the sector 8 of the city, preferably at the University of Saint Gerard. Among the actions taken by this group were:

- Application of 300 doses of immunization.
- Tracking and signaling a radius of 3 km in search of survivors and bodies.
- Working in conjunction with the group of Topos, the Federal Police and the Navy in the initial care, resuscitation and transfer of 9 people rescued from the rubble.
- More than 60 dressings and sutures.
- Monitoring and maintenance of health of mission personnel.

The second group, consisting of specialists in trauma, reconstructive surgery, anesthesiology, surgical and intensive care nurses, was part of a Field Hospital was established in conjunction with the United States at the place called "Killi Point", involving a network trauma care in which our doctors surgically intervened the hospital ship "Comfort". Were to a large number of cases of traumatic amputation, children and adults burned, fractures, crushing limbs and carrying large infections for obvious reasons IMSS staff recognizes the professionalism and capacity of the entire Mexican mission of humanitarian aid to Haiti and the

opportunity offered to us to help a sister nation, we reiterate that we are engaged, if required again to respond with the same promptly and sense of humanity shown so far.

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### (P1-19) Disaster Medical System in APEC Japan 2010

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**Background and Method:** The preparedness for mass casualty is needed in political event. We have the experience to build up the disaster medical system in G8 summit in Okinawa and Hokkaido. But these two areas were resort area which had little population. This time Japan hosted APEC JAPAN 2010 which held in Yokohama City. We reported disaster medical system for this event in big city.

**Result:** We mobilized DMAT from 21 hospitals whole Japan. We set 11 teams in Yokohama city, 10 teams in 2 Airports. DMAT inspected related disaster base hospitals. These hospitals made the plan for receive mass casualty included the victims by CBRNE event and had the exercise. They set up the decontamination system during APEC leader's week. We also have the contingency plan to coordinate with fire department. This contingency plan included transportation plan for hospitals and coordination plan in site. In transportation plan, sever casualty transported dispersal for hospital in Yokohama within 25. For over 25, sever casualty transported intensive for 4 hospitals in Yokohama. After stabilization treatment in these hospitals, the casualty transported dispersal from these hospitals to outside of Yokohama. In coordinate plan in site included job description in command and control, decontamination and medical relief post.

**Discussion:** We established disaster medical system for APEC JAPAN 2010. This event hold in Yokohama City had the big population. Compare with former G8 summit, medical system put importance in mass casualty event. As a result, non mass casualty event happened. But this preparedness will contribute not only future same kind events but also accidental mass casualty event such as train accident.

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### (P1-20) Disasters and Women's Health: The 2010 Earthquake in Haiti

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**Background:** Recent reports have highlighted the health disparities that women and other vulnerable populations experience following disasters. Humanitarian groups have struggled to implement effective measures to mitigate such disparities during subsequent disasters.

**Objectives:** To analyze and provide practical solutions to mitigate barrier's to women's health encountered in Haiti following the 7.0 magnitude earthquake in January 2010.

**Methods:** In February 2010, a New York based team of emergency and international medicine specialists staffed the mobile

emergency department in Port au Prince at L'Hôpital de l'Université d'Etat d'Haïti.

**Results:** Common presentations included infectious diseases, traumatic injuries, chronic disease exacerbations, and follow-up for earthquake-associated conditions. Female gender-specific problems included vaginal infections, breast pain or masses, pregnancy-related concerns, and the effects of gender-based violence. Identified barriers to effective gender-specific care included communication, camp geography, supply availability, and poor inter-organization communication.

**Discussion:** Recent disasters in Haiti, Pakistan, and elsewhere have challenged the international health community to provide gender-balanced healthcare in sub-optimal environments. Much room for improvement remains. Although our assessment team was gender-balanced, improved incorporation of Haitian personnel may have enhanced patient trust, and improved cultural sensitivity and communication. Camp geography should foster both patient privacy and security during sensitive examinations. This could have been improved upon by geographically separating men's and women's treatment areas and using a barrier screen to generate a more private examination environment. Women's health supplies must include an appropriate exam table, emergency obstetrical and midwifery supplies, urine dipsticks, and sanitary and reproductive health supplies. A referral system must be established for patients requiring a higher level-of-care. Lastly, improved inter-organization communication and promotion of resource pooling may improve treatment access and quality for select gender-based interventions.

**Conclusion:** Simple inexpensive modifications to organized post-disaster medical relief settings may dramatically reduce gender-based healthcare disparities.

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### (P1-21) Medical Disaster Relief after the 2009 American Samoan Tsunami: Lessons Learned

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**Background:** Tsunamis most commonly occur in the "Ring of fire" in the Pacific due to frequency of earthquakes and volcanic activity. Damaging tsunamis occur 1–2 times yearly. On September 29, 2009, an earthquake on the Pacific floor caused a tsunami that struck American Samoa, Samoa and Tonga, with only 20 minutes warning.

**Objective:** To evaluate the disaster response in American Samoa by emergency medical services (EMS), the territorial hospital, and the Department of Health.

**Methods:** A retrospective review of EMS logs, public health records, hospital emergency department charts, and key-informant interviews over a 2-week period. Descriptive statistics were used to evaluate data.

**Results:** Three 5-meter waves struck the American Samoan islands, with land inundation as far as 700 meters. Many low-lying villages, including the capital city Pago Pago were affected.